

Listing of claims:

1. – 113. (Cancelled)

114. (New) A method for controlling an ATM or kiosk, comprising the steps of:
providing an embedded software application at the ATM or kiosk;
providing at least one device of at least one device type at the ATM or kiosk;
providing middleware software at the ATM or kiosk for interfacing the application with the at least one device, wherein the middleware comprises a software component for each device type, each software component embodying an ability to interpret specific capabilities of a plurality of devices belonging to the device type that the software component is for; and
controlling within the ATM or kiosk by the software application, through each component, devices belonging to the device type that the component is for, such that the middleware software compensates for capabilities specific to the at least one device and isolates the application from differences between devices.

115. (New) The method of Claim 114, further comprising providing said ATM or kiosk with a data communications interface over which said ATM or kiosk communicates.

116. (New) A method for controlling an ATM or kiosk according to Claim 114 wherein the software component is for performing standardized device functions.

117. (New) A method for controlling an ATM or kiosk according to Claim 116, further comprising providing said ATM or kiosk with a customizable user interface.

118. (New) A method for controlling an ATM or kiosk according to Claim 117 wherein said software component is independent of said user interface.

119. (New) A method for controlling an ATM or kiosk according to Claim 118, further comprising providing said ATM or kiosk with a plurality of software components, at least one of which comprises a capabilities interface.

120. (New) A method for controlling an ATM or kiosk according to Claim 119 wherein the capabilities interface communicates the capabilities of the software component.

121. (New) A method for controlling an ATM or kiosk according to Claim 119 wherein the application and the software components are concurrently operable.

122. (New) A method for controlling an ATM or kiosk according to Claim 116 wherein the software component is constructed with an event generating capability and wherein said software component is operable in a selectable mode in which events are queued up and delivered to the application on demand.

123. (New) A method for controlling an ATM or kiosk according to Claim 114 wherein said middleware software provides service in accordance with at least one software standard for interacting with different hardware systems.

124. (New) A method for controlling an ATM or kiosk according to Claim 123 wherein

said at least one software standard is selected from a group consisting of WOSA XFS, OPOS, OFX, TOPEND®, ActiveX®, Javabeans, SNMP.

125. (New) A method for controlling an ATM or kiosk according to Claim 114 wherein all errors and transgressions are asserted by the middleware software.

126. (New) A method for controlling an ATM or kiosk according to Claim 114 further comprising the step of the middleware software writing trace data to memory and then copying the trace data to disk only when the ATM or kiosk is idle.

127. (New) A method for controlling an ATM or kiosk according to Claim 114 further comprising providing said ATM or kiosk with a web browser.

128. (New) A method for controlling an ATM or kiosk according to Claim 127 where said ATM/kiosk control application is operable from within the environment of said web browser.

129. (New) A method for for controlling an ATM or kiosk according to Claim 128 wherein said web browser provides support for software distribution.

130. (New) A method for for controlling an ATM or kiosk according to Claim 128 wherein said at least one software component is contained in a web browser frame provided at said ATM or kiosk and wherein said at least one software component is operable to detect events

which must be responded to upon occurrence.

131. (New) A method for for controlling an ATM or kiosk according to Claim 127 wherein said middleware software comprises a plurality of COM components having a scriptable ActiveX® interface.

132. (New) A method for for controlling an ATM or kiosk according to Claim 127 wherein said middleware software comprises a plurality of Javabeans™ components having a scriptable interface.

133. (New) A method for for controlling an ATM or kiosk according to Claim 127 wherein said web browser communicates with conventional web sites to be displayed by the ATM or kiosk.

134. (New) A method for for controlling an ATM or kiosk according to Claim 127 wherein the middleware software allows or disallows access to particular web sites according to a rule database.

135. (New) A method for for controlling an ATM or kiosk according to Claim 127 wherein the middleware software customizes time-out of the display of individual internet web sites.

136. (New) A method for for controlling an ATM or kiosk according to Claim 114

wherein the ATM or kiosk enables the software application and middleware to be altered across a network by an authority.

137. (New) A method for for controlling an ATM or kiosk according to Claim 114 wherein the ATM or kiosk communicates status information to a remote station.

138. (New) A method for for controlling an ATM or kiosk according to Claim 114 wherein said at least one software component encapsulates software logic required for performing at least a portion of a transaction.

139. (New) A method for controlling an ATM or kiosk according to Claim 114 wherein said at least one software component provides abstraction of details of a device controlled by said software component.

140. (New) A method for controlling an ATM or kiosk according to Claim 114 further comprising the step of creating a separate thread for each of a plurality of software components.

141. (New) A method for controlling an ATM or kiosk according to Claim 115 further comprising the step of enabling said software application to communicate over said communications interface through a software component.

142. (New) A method for controlling an ATM or kiosk according to Claim 116 wherein at least one of said software components implements an OFX interface or a portion thereof, to

facilitate communication with an OFX server.

143. (New) A method for controlling an ATM or kiosk according to Claim 114 wherein said middleware software provides generic error handlers.

144. (New) A method for controlling an ATM or kiosk according to Claim 115 further comprising configuring a plurality of ATMs or kiosks, and wherein configuration data for said step of configuring is centrally held in a distribution file.

145. (New) A method for controlling an ATM or kiosk according to Claim 117 further comprising the step of constructing said user interface using common web authoring tools.

146. (New) A method for controlling an ATM or kiosk according to Claim 114 wherein said software application runs on a Microsoft Windows NT operating system.

147. (New) An ATM or kiosk comprising:
an embedded software application;
at least one device of at least one device type; and
middleware software adapted to interface the application with the at least one device,
the middleware software comprising a software component for each device type, each software component embodying an ability to interpret specific capabilities of a plurality of devices belonging to the device type that the software component is for, each component being adapted to control devices belonging to the device type that the software component is for within the ATM

or kiosk by the software application, such that the middleware software compensates for capabilities specific to the at least one device and isolates the application from differences between devices.

148. (New) The ATM or kiosk of Claim 147 further comprising a data communications interface and wherein said ATM or Kiosk is adapted to communicate over said data communications interface.

149. (New) The ATM or kiosk of Claim 147 wherein the software components are for performing standardized device functions.

150. (New) The ATM or kiosk of Claim 149, comprising a customizable user interface.

151. (New) The ATM or kiosk of Claim 150 wherein said software components are independent of said user interface.

152. (New) The ATM or kiosk of Claim 151 further comprising a plurality of software components, at least one of which comprises a capabilities interface.

153. (New) The ATM or kiosk of Claim 152 wherein the capabilities interface can communicate the capabilities of the software component.

154. (New) The ATM or kiosk of Claim 152 wherein the software application and the

software components are concurrently operable.

155. (New) The ATM or kiosk of Claim 147 wherein said software component is constructed with an event generating capability and wherein said software component is operable in a selectable mode in which events are queued up and delivered to the application on demand.

156. (New) The ATM or kiosk according to Claim 147 wherein said middleware software is adapted to provide service in accordance with at least one software standard for interacting with different hardware systems.

157. (New) The ATM or kiosk according to Claim 156 wherein said at least one software standard is selected from a group consisting of WOSA XFS, OPOS, OFX, TOPEND, ActiveX®, Javabeans, SNMP.

158. (New) The ATM or kiosk of Claim 147 wherein said ATM/kiosk control application is operable from within a web browser environment.

159. (New) The ATM or kiosk of Claim 158 wherein a web browser provides support for software distribution.

160. (New) The ATM or kiosk of Claim 158 further comprising a web browser frame containing at least one software component operable to detect events which must be responded to upon occurrence.

161. (New) The ATM or kiosk of Claim 147 wherein said middleware software comprises a plurality of COM components having a scriptable ActiveX® interface.

162. (New) The ATM or kiosk of Claim 147 wherein said middleware software comprises a plurality of Javabeans™ components having a scriptable interface.

163. (New) The ATM or kiosk of Claim 147 wherein a web browser is adapted to communicate with conventional web sites to be displayed by the ATM or Kiosk.

164. (New) The ATM or kiosk of claim 147, adapted to allow the ATM/kiosk software application and middleware to be altered across a network by an authority.

165. (New) The ATM or kiosk of claim 147, adapted to communicate status information to a remote station.

166. (New) The ATM or Kiosk of claim 147 wherein said at least one software component encapsulates software logic required for performing at least a portion of a transaction.

167. (New) The ATM or Kiosk of claim 152 wherein said at least one software component provides abstraction of details of a device controlled by said software component.

168. (New) The ATM or kiosk of claim 152 wherein each of a plurality of the software

components comprises means for creating a separate thread.

169. (New) The ATM or kiosk of claim 152, wherein at least one of the software components comprises means for enabling said software application to communicate over said communication interface.

170. (New) The ATM or kiosk of claim 152 wherein at least one of said software components implements an OFX interface or a portion thereof, to facilitate communication with an OFX server.

171. (New) The ATM or kiosk of Claim 147 wherein said middleware software provides generic error handlers.

172. (New) A network comprising a plurality of ATMs or kiosks according to Claim 147, wherein configuration data for configuring the ATMs or kiosks is centrally held in a distribution file.

173. (New) The ATM or kiosk of Claim 150, wherein said user interface is adapted to be constructed using common web authoring tools.

174. (New) The ATM or kiosk of Claim 147 wherein said ATM/kiosk control application runs on a Microsoft Windows NT operating system.

175. (New) A network comprising a plurality of ATMs or kiosks according to Claim 147, one or more networking means and one or more application servers.

176. (New) An Extranet formed by combining a plurality of networks of ATMs or kiosks according to Claim 175.

177. (New) An Extranet according to Claim 176 provided with a security mechanism which limits the hardware functionality available to individual software applications.

178. (New) A method for controlling an ATM or kiosk according to claim 114 wherein said ATM or kiosk is operated by a first organization, wherein said ATM/kiosk control application is provided by a second organization, and wherein said software application provides a transaction type different than the transaction type associated with said first organization.

179. (New) A method for providing transaction services according to Claim 114, further comprising the step of creating an event thread associated with each software component for insuring that device states persist from a page of the application to another page of the application.

180. (New) A method for controlling an ATM or kiosk according to Claim 114, further comprising the step of encapsulating essential software logic of the software component so that an associated user interface is freely defined.

181. (New) A method for controlling an ATM or kiosk according to Claim 114 in a network comprising a plurality of ATMs or kiosks each having at least one device of at least one device type, the at least one device having capabilities, wherein the capabilities of a device of at least one device type in at least one of the ATMs or kiosks are different from the capabilities of a device of the same device type in at least one other of the ATMs or kiosks, and wherein different services are provided for the different device capabilities.

182. (New) A network comprising a plurality of the ATMs or kiosks according to Claim 147, wherein the capabilities of a device of at least one device type in at least one of the ATMs or kiosks are different from the capabilities of a device of the same device type in at least one other of the ATMs or kiosks.

183. (New) A method for providing transaction services in an ATM or Kiosk having at least one transaction device of at least one transaction device type, the at least one transaction device having capabilities, comprising the steps of:

controlling said ATM or Kiosk by at least one software application and an operating system, both of which are installed in the ATM or Kiosk;

wherein the at least one software application interacts with said at least one transaction device of said transaction device type through a programming interface of middleware software

comprising transaction objects providing transaction services; and

wherein the transaction services provided by the transaction objects depend on the transaction device type, and the transaction objects have the ability to provide transaction services for said at least one transaction device of said transaction device type, as well as for a transaction device of said transaction device type that has capabilities different from the capabilities of said at least one transaction device, but the programming interface of the transaction objects is independent of the capabilities of the transaction device.

184. (New) An ATM or Kiosk comprising

at least one transaction device of at least one transaction device type;

at least one software application and an operating system installed in the ATM or Kiosk, the at least one software application and the operating system controlling and receiving information from said at least one transaction device type;

a programming interface of middleware software through which the at least one software application and the operating system control and receive information from said at least one transaction device type, wherein the programming interface of middleware software comprises transaction objects providing transaction services, wherein the transaction services provided by the transaction objects depend on the transaction device type, and the transaction objects have the ability to provide transaction services for said at least one transaction device of said transaction device type, as well as for a transaction device of said transaction device type that has capabilities different from the capabilities of said at least one transaction device, but the programming interface of the transaction objects is independent of the capabilities of the transaction device.